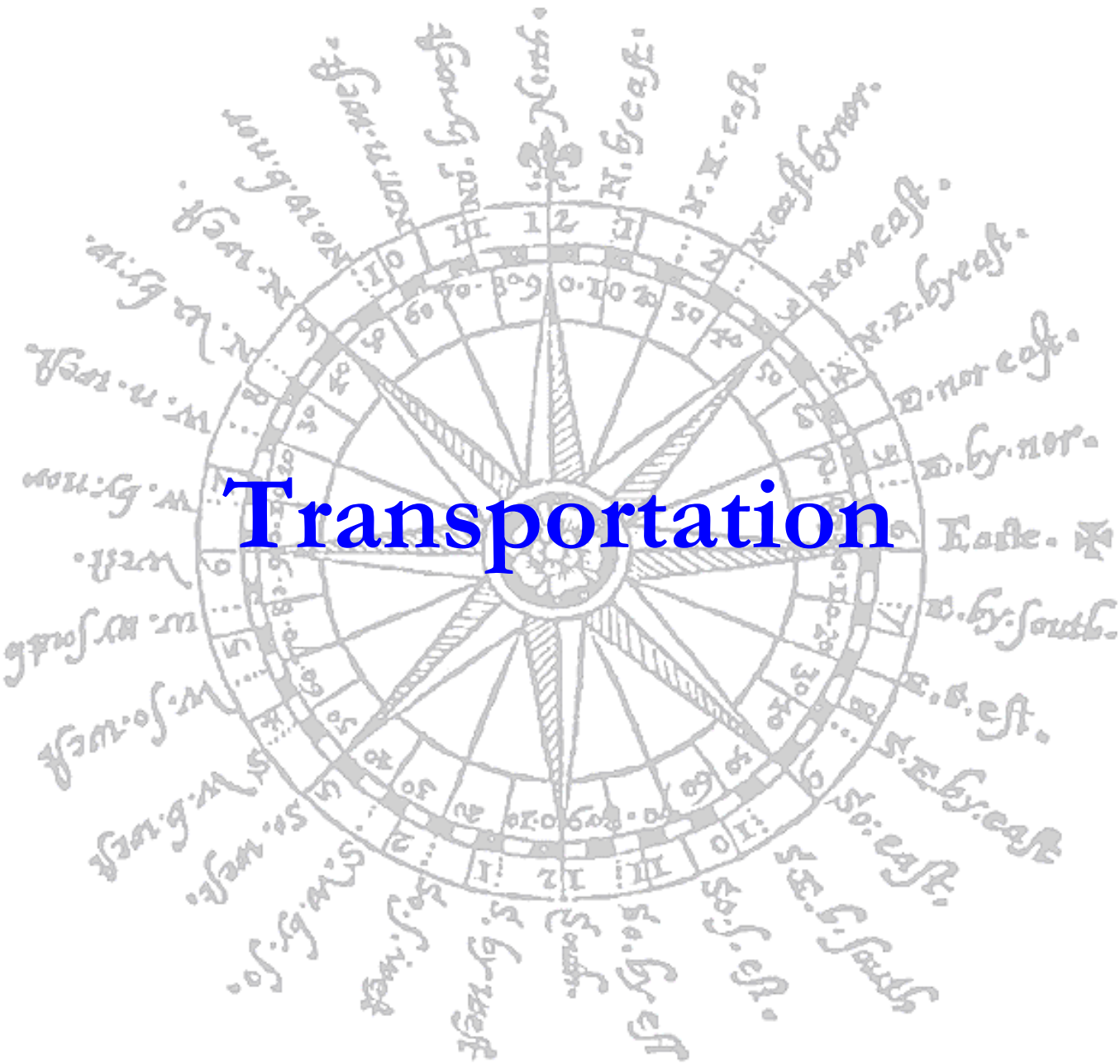


Transportation

TRANSPORTATION

INTRODUCTION

The transportation system can be viewed as a collection of facilities and machines that enhance mobility. When we think of transportation we tend to think of roads, and although roads are the major component of York County's transportation network, it also encompasses airspace, bikeways, railways, walkways, and waterways. The safe and efficient movement of people and goods is vital to the quality of life and the economic health of the County and the region. Transportation is also a critical part of the overall planning process because it not only affects land use but is itself a land use. It shapes and molds the community in numerous ways. Roads and intersections use a great deal of land and also attract development. New roads can channel business away from old routes, thereby affecting existing businesses. Highways and rail lines form physical barriers to development and tend to separate communities as well as create traffic choke points where they intersect.

York County's first transportation plan was a thoroughfares plan that gave no consideration to other modes of transportation. It was not until the 1991 *Comprehensive Plan* that roadways came to be fully recognized as just one component of a multi-modal transportation system. The year 1991 also saw the passage by Congress of the Intermodal Surface Transportation Efficiency Act (ISTEA), which reflected a growing awareness of the limitations – financial, environmental, and practical – of a transportation strategy that focuses on building more and wider roads. State and regional transportation plans must now be "fiscally constrained," which means that funding must be identified for every project in the plan. They must also conform to Federal air quality standards, which further limits the number of projects that can be included, and consider all modes in making transportation investment decisions. These factors indicate the need for increased attention to other modes of transportation – such as rail, buses, bicycling, and walking – that do not rely on the single-occupancy vehicle. Road construction, therefore, is only part of the solution to our County's and our nation's transportation problems.

EXISTING CONDITIONS

Airports

Newport News/Williamsburg International Airport straddles the County boundary with Newport News. The airport terminal is located in Newport News, but both runways extend into York County. The airport is owned and operated by the Peninsula Airport Commission (PAC), which represents the cities of Newport News and Hampton. Also within about an hour's drive of much of the County are Norfolk International and Richmond International, both of which offer direct flights to more cities than does Newport News/Williamsburg International but are much less convenient because of their distance from the County. Other airport facilities that are located in or affect York County include Langley Air Force Base in Hampton, airfields at Camp Peary and the Yorktown Naval Weapons Station, and the

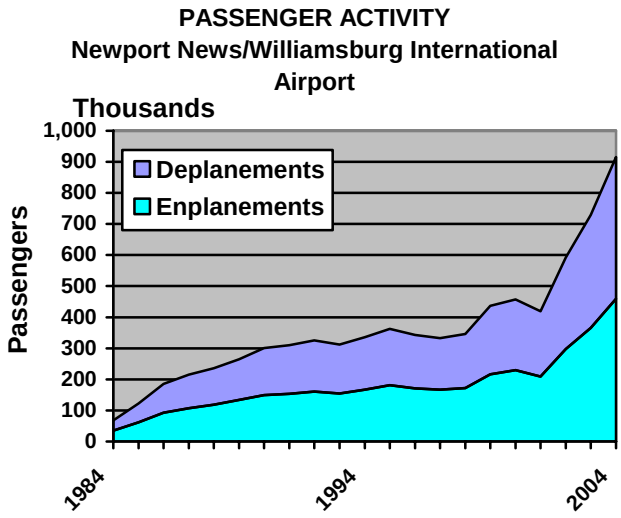


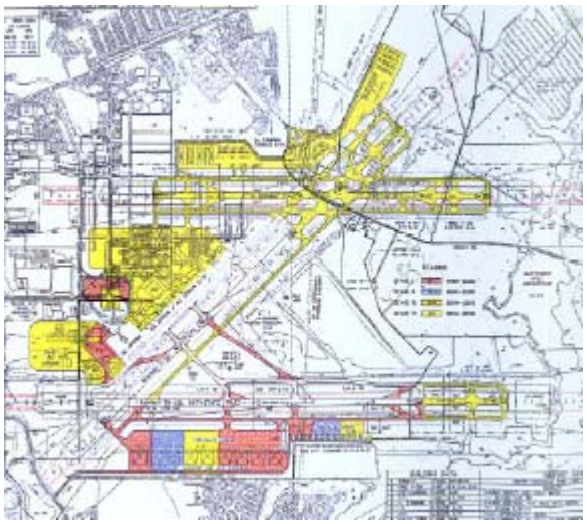
Figure 1

Williamsburg-Jamestown Airport in James City County, which serves some of the general aviation needs of the Williamsburg area.

The Federal Aviation Administration (FAA) recommends that an airport begin planning for additional runway capacity when it reaches 60% of its operational capacity. This approach ensures that the need for improvements to an airport is dictated by demand and not by optimistic expectations that might or might not be realistic. With almost 228,000 aircraft operations (takeoffs and landings) in 2004, Newport News/Williamsburg Airport has reached the point where detailed planning for capacity enhancements is warranted.

The PAC adopted an *Airport Master Plan* in 1997 that calls for the ultimate extension of both existing runways and construction of a third (shown in yellow in the figure below) in order to accommodate projected growth in operations. Under this scenario, according to the *Airport Master Plan,* a large segment of Oriana Road would be relocated to accommodate the runway extensions. While such a configuration would extend the runways closer to populated areas of York County, the airport expansion is expected to *reduce* the noise problem experienced by County residents who live in the path of an airport runway. This is predicated on an assumed shift in the fleet mix away from louder military aircraft as well as the FAA-mandated phase-out of older planes with louder engines. Norfolk International Airport also has plans to add a new runway to accommodate growth in operations.

An *Eastern Virginia Airport System Study,* the purpose of which was to identify a system of airports that would best meet the air transportation needs of the greater eastern Virginia region encompassing the combined market area of the three airports, was completed in 2001. The study recommended construction of a new airport in the Isle of Wight County area by 2030 as the best long-term strategy for maintaining the region's economic competitiveness and providing citizens with efficient and convenient air service. It should be noted that construction of a new regional "super-port," if it occurs, probably would not take place before 2030 and would not preclude the expansion of the Newport News airport to accommodate existing and projected future operations. In fact, the Newport News airport will need to be expanded whether or not a "super-port" is built.



In the interest of air traffic safety, York County has adopted an Airport Safety Management overlay district that establishes special height limitations for development in proximity to airports and the various airport approach zones. The purpose of these regulations, incorporated into the Zoning Ordinance, is to protect air space in the vicinity of Newport News/Williamsburg Airport and the various military airports and airfields in the area.

Bikeways

Although most often thought of as a recreational activity, bicycling is also a mode of transportation. Benefits of bicycle use include energy conservation, reduced noise and air pollution, traffic reduction, and health and fitness improvement. York County's mild weather, relatively flat terrain, and tourist attractions offer ideal opportunities for bicycling.

In 1993 York County joined with Williamsburg and James City County in developing and adopting a *Regional Bicycle Facilities Plan* (or *Regional Bikeway Plan*) for the three localities. A regional

approach was taken in recognition of the fact that bikeways, like roadways, should not abruptly end at jurisdictional boundary lines. The three governing bodies also formed the Historic Triangle Bicycle Advisory Committee (HTBAC) comprised of citizen appointees and staff from each locality as well as the National Park Service, the Colonial Williamsburg Foundation, and the College of William and Mary. The HTBAC is responsible for recommending projects and priorities for implementation under the adopted Regional Bikeways Plan and recommending amendments to the Plan. It is also responsible for developing and implementing promotional, informational, and safety initiatives related to bicycling.

There are five basic types of bikeways as defined in the *Virginia Bicycle Facility Resource Guide*[1], published by VDOT in 2002. Corresponding designations in the *Regional Bikeway Plan* are noted.

- ***Shared Lane:*** Shared motor vehicle/bicycle use of a "standard" width (12') travel lane. Shared lanes and wide outside lanes are referred to as shared roadways in the *Regional Bikeway Plan*.

- ***Wide Outside Lane (Wide Curb Lane):*** An outside travel lane with a width of at least 14 feet.

- ***Bike Lane:*** A portion of the roadway designated by striping, signing, and/or pavement markings for preferential or exclusive use of bicycles. The *Regional Bikeway Plan* refers to these facilities and to Shoulders as Shoulder Bike Lanes.

- ***Shoulder:*** A paved portion of the roadway to the right of the edge stripe on which bicyclists may ride. These areas are not marked or signed as bike lanes. The minimum desirable width is 4 feet, or 5 feet where there are side obstructions such as curbing, guardrails, utility poles, etc.

- ***Separate Bike Path (Shared Use Path):*** A facility that is physically separated from the roadway and intended for bicycle use. The *Regional Bikeway Plan* refers to these facilities as Multi-Use Trails.

Updated in 1997, the *Regional Bikeway Plan* provides for an 89-mile bikeway system comprised of approximately 57 miles of shoulder lanes, 35 miles of shared roadways, and 22 miles of multi-use trails In York County. Since the adoption of the plan, shoulder bike lanes have been built along Amory Lane, East Rochambeau Drive, Goodwin Neck Road, Mooretown Road, and Old York-Hampton Highway, and the Waller Mill Rail Trail was constructed as a multi-use trail running through the City of Williamsburg's Waller Mill Park from Mooretown Road to East Rochambeau Drive generally parallel to Airport Road. Three of these bikeways (Amory Lane, Mooretown Road, and Old York-Hampton Highway) were built as part of road construction or widening projects. The remaining two bikeways were constructed with CMAQ and RSTP (Regional Surface Transportation Program) funds.

Railways

The CSX Transportation rail line between Richmond and the coal port facilities of Newport News generally runs along the spine of the Peninsula and consists primarily of single- and double-track sections, with spurs and sidings to industrial areas, including a spur line to the Dominion Virginia Power Yorktown Power Station and the Giant oil refinery in the Goodwin Neck area of York County. The CSX main line provides both passenger and freight service. Because there is only one track throughout much of the rail corridor, the shared use of the CSX rail line for both passenger and freight service creates potential for conflict.

Amtrak offers daily service to the Peninsula via the CSX line, with stations at the recently renovated Williamsburg Transportation Center on North Boundary Street in downtown

[1] *Virginia Bicycle Facility Resource Guide*, p. 2-14

Williamsburg and the Amtrak Station on Warwick Boulevard in Newport News. Typically, two trains run daily in each direction, and Amtrak plans to increase service to three round trips daily. There is no rail link between the Peninsula and south Hampton Roads; Amtrak provides an intermodal connection from the Newport News station to south Hampton Roads via shuttle bus service across the Hampton Roads Bridge Tunnel.

The movement of freight along the CSX line is important to both the economy and the transportation network. This rail line is classified as one of the highest density freight tracks in the state, with over 30 million gross ton-miles per mile of line per year. The primary freight activity along this main-line route is the hauling of coal to the coal terminals in Newport News for shipment overseas. The existing CSX main line and the Giant/Dominion Virginia Power spur provide an opportunity to locate rail-served industry in the Goodwin Neck/Seaford area, which is designated for industrial use. That capability is considered an attractive potential opportunity for some of the undeveloped property in the York River Commerce Park.

The County is participating in two regional initiatives that could result in significant improvement in passenger rail transportation on the Peninsula. The I-64 Major Investment Study calls for double-tracking the CSX corridor to provide for some separation of passenger rail and freight service. This would allow passenger rail speeds up to 110 mph (versus the current maximum train speed of 79 mph) and up to nine trains per direction per day. The possible establishment of higher-speed rail service along this corridor is being considered as part of the Richmond/Hampton Roads Passenger Rail Study that has been undertaken by the Virginia Department of Rail and Public Transportation and the Federal Railroad Administration to investigate a program of improvements that would be necessary to accommodate frequent passenger trains through the Richmond/Hampton Roads study area. The project is evaluating potential alternatives for higher-speed rail service in both the existing Amtrak Corridor from Richmond to Williamsburg to Newport News and the Richmond-Petersburg-South Hampton Roads Corridor along the Norfolk Southern rail line. Either of these corridors could provide enhanced rail connections to the Southeast, Northeast and Mid-Atlantic regions as an extension of the Southeast High Speed Rail Corridor. The Peninsula alignment could greatly improve rail service for residents of York County and neighboring jurisdictions, while the south Hampton Roads alignment would offer only modest benefits to the Peninsula as a result of the possible diversion of trips that would otherwise be made via automobile along I-64.

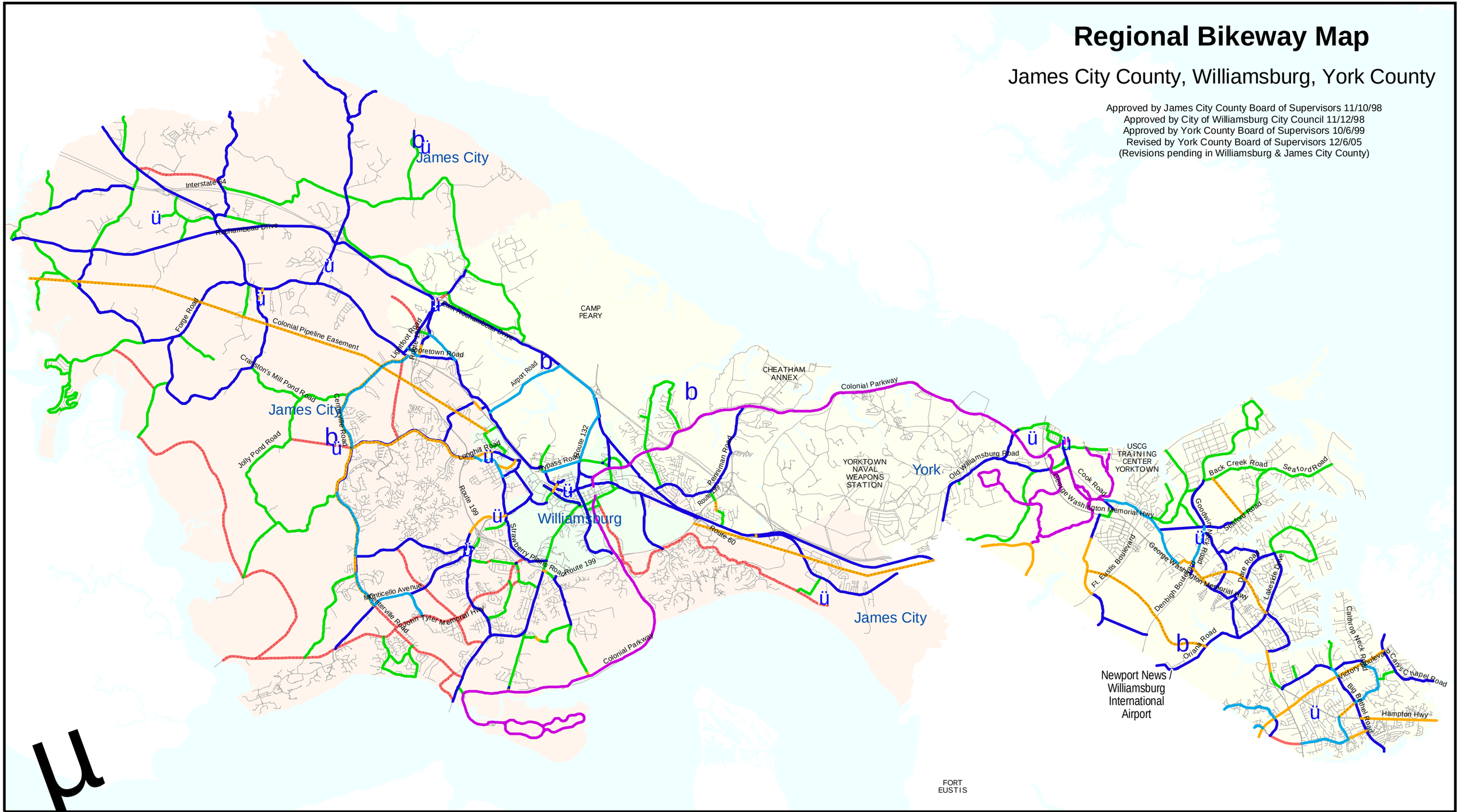
The CSX corridor has also been identified as a potential light rail corridor. As part of the Peninsula Rail Transportation Project, which grew out of a 1997 Major Investment Study (MIS) of the CSX Railway Corridor, Hampton Roads Transit – in cooperation with the Federal Transit Administration, local jurisdictions, the business community, and the general public – completed an Alternatives Analysis that evaluated various potential rail alignments to serve the travel corridor and identified a preferred alignment to carry into further detailed analysis and environmental review. This "Locally Preferred Alternative," which was endorsed by the Board of Supervisors in March 2003,[2] would provide for a light rail linkage between Williamsburg and downtown Newport News generally along the CSX railroad right-of-way and would include a connecting corridor to downtown Hampton generally along Hampton Roads Center Parkway. However, as noted previously, a major impediment to the enhancement of rail service on the Peninsula – including light rail and/or high-speed rail – is the sharing of tracks by passenger and freight rail service.

[2] Resolution No. R03-43, adopted by the York County Board of Supervisors on March 4, 2003

Regional Bikeway Map

James City County, Williamsburg, York County

Approved by James City County Board of Supervisors 11/10/98
Approved by City of Williamsburg City Council 11/12/98
Approved by York County Board of Supervisors 10/6/99
Revised by York County Board of Supervisors 12/6/05
(Revisions pending in Williamsburg & James City County)



Bike Trails

- National Park Service Responsible Facility
- Existing Bike Trails
- Proposed Multi-Use Path
- Proposed Shoulder Bike Lane
- Proposed Shared Roadway with Signage
- Conceptual Corridor
- Conceptual Location

ü Parking Area
b Mountain Bike Trail

Miles
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Roadways

There are approximately 1,600 roads in the County, most of which[3], as in all Virginia counties except Arlington and Henrico, are owned and maintained not by the County but by the Virginia Department of Transportation (VDOT). Largely because of a topography typified by a large number of peninsulas and inlets in the lower County and pronounced ridgelines which fall off into steep ravines in the upper County, combined with a generally linear alignment along the banks of the York River, the roadway network has developed with a large number of collector roads feeding relatively few arterial roads. In the functional hierarchy of streets, higher order streets, such as freeways, arterials, and major collectors are intended more to move traffic than to provide land access. Minor collectors and sub-collectors serve both functions, and local streets, which are typically subdivision streets, are intended to provide land access. Generally speaking, local streets feed into the sub-collector and collector roads, which move traffic to the arterial and freeway system, with increasing speeds and diminishing land access as one moves from lower order to higher order streets.[4]

Functional Classification	State Road System	Route Numbers
Freeway	Interstate Highways	
Arterial	Primary System	Less than 600
Collector	Older Secondary System	600s and 700s
Local	Newer Secondary System	800 or greater

Table 1

Table 1 describes the general relationship between roadway classification and the state road system designation, although there is not always a perfect correlation. It is often also possible to think of such roads in terms of their traffic volumes, with the most traffic generally found on freeways and the least on subdivision or access streets. As traffic volumes increase, the level and degree of roadway design must also increase. Frequently, this means building roads with more and wider lanes, better shoulders, access controls, and higher speed limits, all of which can increase both the safety and the capacity of the roadway. They also increase the cost of the road and can create barriers to modes other than automobile travel.

In York County as in most of the United States, the automobile is the principal mode of travel. In fact, according to data from the 2000 Census, York County is more dependent on the single-occupant vehicle (SOV) than most neighboring localities, and this dependence is growing. Between 1980 and 1990, the proportion of York County commuters who drove to work alone increased from 66% to 83%, while the proportion who rode in carpools fell from 25% to 13%. By 2000, 85% of commuters were driving to work alone and only 9% were carpooling. Similarly, public transportation (buses and taxicabs) accounted for 1.9% of commuters in 1980, 0.7% in 1990, and 0.5% in 2000. Finally, the percentage of people who walked to work declined from 6% in 1980 to 2.5% in 1990 to 1.5% in 2000.

The growing prevalence of the single-occupant vehicle, combined with high residential and commercial growth in both the County and the region, has caused traffic on many roads to exceed their capacity. Roadway capacity is derived from a mathematical relationship between roadway geometric features (lane width, horizontal and vertical curvature, shoulder type and width, etc.) surface treatment, access type and spacing, intersection location and type of control (stop sign, yield sign, traffic signal, etc.), and the general characteristics of travel (peak hours, number of heavy vehicles in the traffic stream, the number and percentage of left turns at intersections, etc.).

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[3] There are also approximately 332 private streets (mostly within apartment complexes, timeshare resorts, and townhouse, duplex, and quadruplex developments) and 210 Federally maintained roads, including the Colonial Parkway and roads located on military bases.

[4] Vergil G. Stover and Frank J. Koepke, *Transportation and Land Development* (Institute of Transportation Engineers: Washington D.C.) 2002, pp 4-3 through 4-11

All else being equal, the capacity of a roadway is defined by its conflict points, which include access driveways and intersections: the fewer the conflict points, the greater the capacity of the roadway.

Capacity analysis involves the estimation of the traffic-carrying ability of a roadway over a range of operational conditions, which are defined in terms of level of service (LOS).[5] "The concept of *levels of service* uses qualitative measures that characterize operational conditions within a traffic stream and their perception by motorists and passengers. The descriptions of individual levels of service characterize these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience."[6] There are six levels of service with letter designations of A through F; LOS A represents the best operating conditions (free-flow) and LOS F represents the worst (gridlock). These delays increase air pollution, waste energy, and cause driver frustration, which often manifests itself in attempts to find short cuts, usually along roads not designed for through traffic.

Hampton Roads' most congested corridors are identified in the *Congestion Management System* (CMS) for the region, prepared by the Hampton Roads Planning District Commission (HRPDC). The region's first CMS report, which Federal regulations require for all metropolitan areas with populations over 200,000, was released in 1995, with subsequent updates in 1997, 2001, and 2005. As stated in the 2005 CMS, "The CMS program is an on-going process that identifies, develops, evaluates, and implements transportation strategies to reduce traffic congestion and enhance mobility" throughout the region.[7] The CMS does not encompass the region's entire roadway network; only interstates, expressways, principal and minor arterials, and selected collectors in the Hampton Roads study area.[8]

The 2005 CMS forecasts levels of service on major roads in both the short term (2008) and the long term (2026). According to this analysis, the following County roadways and roadway segments, listed in **Table 2** below, will be moderately or severely congested by 2026. Some are experiencing severe congestion now while others are projected to become congested by 2008 or 2026. They are grouped into Categories I through IV based on the level of congestion (severe or moderate) and when it occurs (currently, 2008, or 2026). In the CMS, moderate congestion is defined as LOS D while LOS E and F are considered to represent severe congestion.

Present and Future Congested Roadways in York County

Route No.	Route Name	From	To	Cate-gory
Severely Congested Roadways				
17	George Washington Mem. Hwy	City of Newport News	Denbigh Boulevard	I
17	George Washington Mem. Hwy	Goosley Road	Coleman Bridge	I
105	Fort Eustis Boulevard	City of Newport News	Route 17	I
173	Denbigh Boulevard	City of Newport News	Route 17	I
238	Goosley Road	Crawford	Route 17	I
171	Victory Boulevard	City of Newport News	Route 17	II
171	Victory Boulevard	Big Bethel Road	City of Poquoson	II
143	Merrimac Trail	Route 199	James City County	II
64	Interstate 64	James City County	Route 199 (south)	II
173	Goodwin Neck Road	Route 17	Wolftrap Road	II
Moderately Congested Roadways				
171	Victory Boulevard	Route 17	Big Bethel Road	III

[5] Transportation Research Board, *Highway Capacity Manual, Special Report 209, Third Edition* (1998), p. 1-3
[6] Highway Capacity Manual, p.1-4
[7] *Hampton Roads Congestion Management System*, p. 5.
[8] Page 24

Present and Future Congested Roadways in York County				
Route No.	**Route Name**	**From**	**To**	**Cate-gory**
132	Route 132	Bypass Road	Capitol Landing Road	III
60	Bypass Road	City of Williamsburg	Waller Mill Road	III
143	Merrimac Trail	Second Street	Penniman Road	III
713	Waller Mill Road	Bypass Road	Mooretown Road	III
NA	Colonial Parkway	City of Williamsburg	Ballard Street	III
238	Cook Road	Goosley Road	Ballard Street	III
238	Old Williamsburg Road	City of Newport News	Goosley Road	III
60	Pocahontas Trail	Route 199	James City County	III
641	Penniman Road	Route 199	Colonial Parkway	III
600	Big Bethel Road	City of Hampton	Hampton Highway	IV
782	East Yorktown Road	Victory Boulevard	City of Poquoson	IV
60	Bypass Road	Waller Mill Road	Route 132	IV
238	Goosley Road	Old Williamsburg Road	Crawford Road	IV
134	Hampton Highway	Route 17	City of Hampton	IV
646	Newman Road	Interstate 64	Fenton Mill Road	IV
Source: Hampton Roads Planning District Commission, *Congested Management System, 2005* (Categorization by the York County Planning Division).				

Table 2

Traffic forecasting is not an exact science, and no model is perfect. Furthermore, the CMS data are based on various assumptions about long-range population and employment growth patterns that are by necessity somewhat speculative. Mooretown Road, in particular, which is experiencing significant traffic growth with the emergence of the Lightfoot area as a major retail destination, will need to be closely monitored as development – including the Sentara Williamsburg Community Hospital currently under construction – continues in this area. Although the prioritization of improvement projects and the allocation of transportation funds should not be based solely on this information, the CMS is a useful tool for helping to identify existing and future problem areas where the County should concentrate its efforts.

As traffic has increased, so has the number of crashes on York County's roads (see **Figure 2**). For the period from 1993 through 2003, crashes have increased by an annual average of 3.8%; however, this figure may be skewed upward by an unusually sharp increase in 2003. The average annual increase in crashes from 1993 through 2002 was 2.0% - slightly over half the 1993-03 rate. Not surprisingly, Route 17 and I-64 account for almost half the crashes that have occurred on the County's roadways in recent years. Crash trends are monitored by the County's Transportation Safety Commission, which is an advisory body to the Board of Supervisors composed of County citizens and staff who have an interest in transportation safety. Also represented on the Commission are various other agencies, including VDOT, the Coast Guard, the National Park Service, the Virginia Department of Motor Vehicles, and the Virginia State Police. One activity of the Commission is to analyze accident trends to identify hazardous locations, which can then be emphasized – through education, enforcement, engineering, or some combination thereof. The HRPDC has also provided assistance with the publication in 2003 of a *Regional Safety Study* that included detailed analysis of two of York County's dangerous intersections and will be updated on a regular basis. Continued support of this effort is important, but more timely and comprehensive analysis of York County's crash locations will require close coordination among the Sheriff's Office, VDOT, and possibly the HRPDC. One of the purposes of the Transportation Safety Commission is to facilitate this type of collaborative effort.

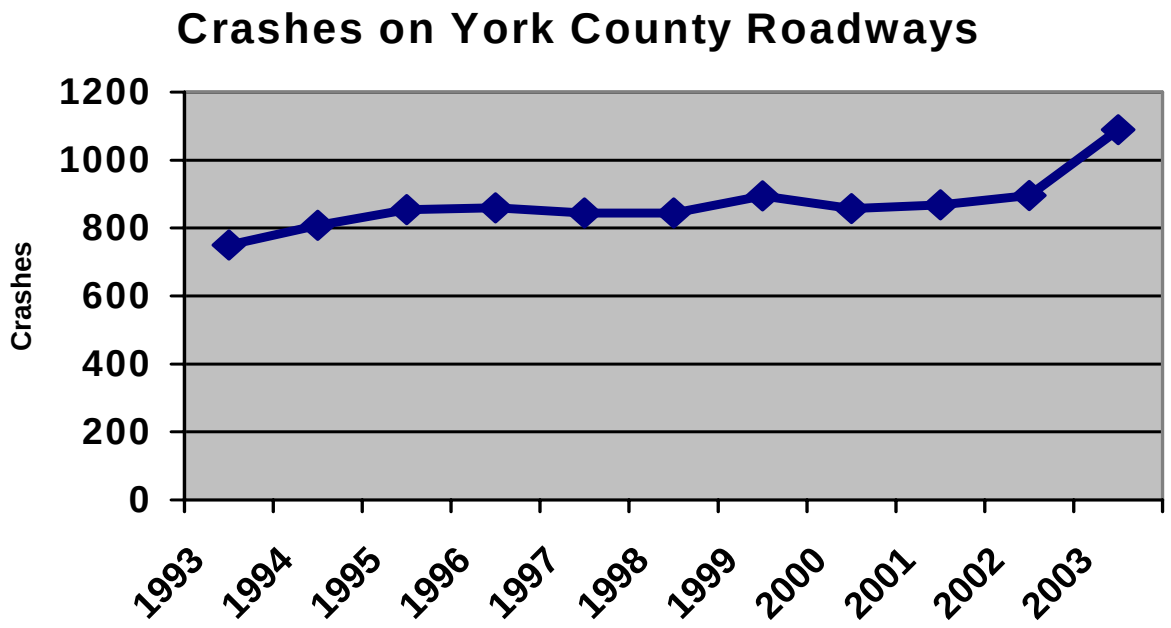


Figure 2

Taken together, capacity and safety deficiencies are indicators that some type of road improvement is needed. The four basic types of improvements are 1) New Facilities, which remove traffic from existing roadways; 2) New Through Lanes, which add capacity and enhance safety; 2) Spot Improvements, such as turn lanes, improved roadway geometrics, signals, signs, and pavement markings; and 4) Transportation System Management (TSM) Measures, which usually focus on reducing peak hour demand by encouraging alternative travel modes or off-peak travel times.

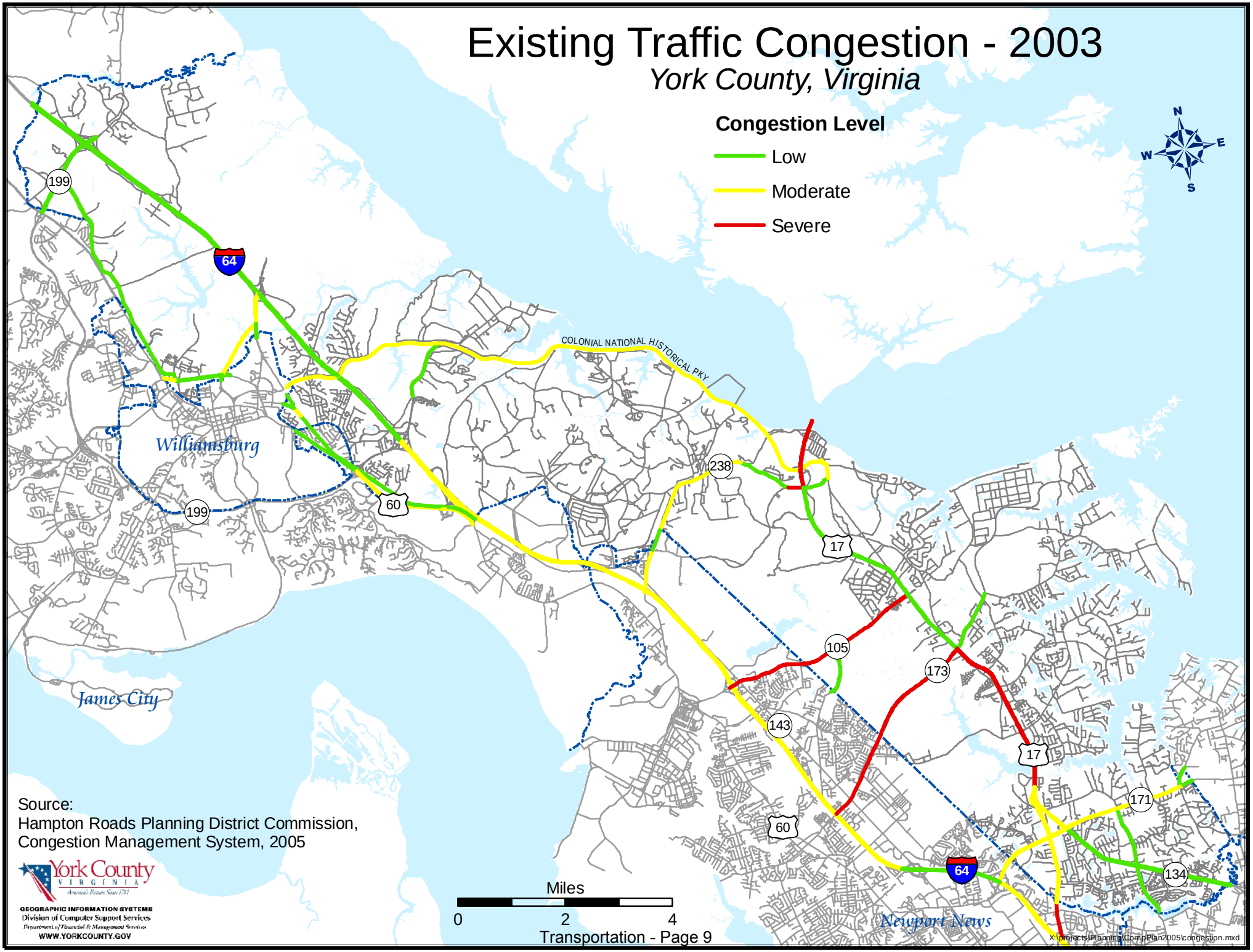
The County and VDOT have worked together to formulate plans, within increasingly severe funding constraints, to address some of the County's critically congested corridors. Most importantly, VDOT's Six-Year Improvement Program includes a project to widen Route 17 to six lanes between Hampton Highway and Wolftrap Road. While funds for construction have yet to be allocated, VDOT is proceeding with the necessary engineering and right-of-way acquisition in anticipation that construction funds will be forthcoming.

Another project in the state six-year plan would widen Fort Eustis Boulevard from two to four lanes from Route 17 to the Newport News city line. This is listed as a "development" project, which means that construction funds are not currently allocated within VDOT's six-year planning horizon; however, engineering and right-of-way acquisition are underway.

Finally, there is a project to extend Fort Eustis Boulevard from its present terminus just east of Route 17 in a southeasterly direction to Old York-Hampton Highway. By providing more direct access to Interstate 64 via Fort Eustis Boulevard, this project, which is funded almost entirely through Regional Surface Transportation Program funds, will divert traffic off of Route 17 and provide more direct access to I-64 for existing and future businesses in the York River Commerce Park on Old York-Hampton Highway. The County plans to continue this extension all the way to the intersection of Goodwin Neck Road and Seaford Road, which will further divert traffic off of Route 17, as well as Goodwin Neck Road and Denbigh Boulevard, and greatly improve interstate access for Seaford residents. The major obstacle is that this will require a crossing of the CSX railroad tracks.

Existing Traffic Congestion - 2003

York County, Virginia



Source:
Hampton Roads Planning District Commission,
Congestion Management System, 2005

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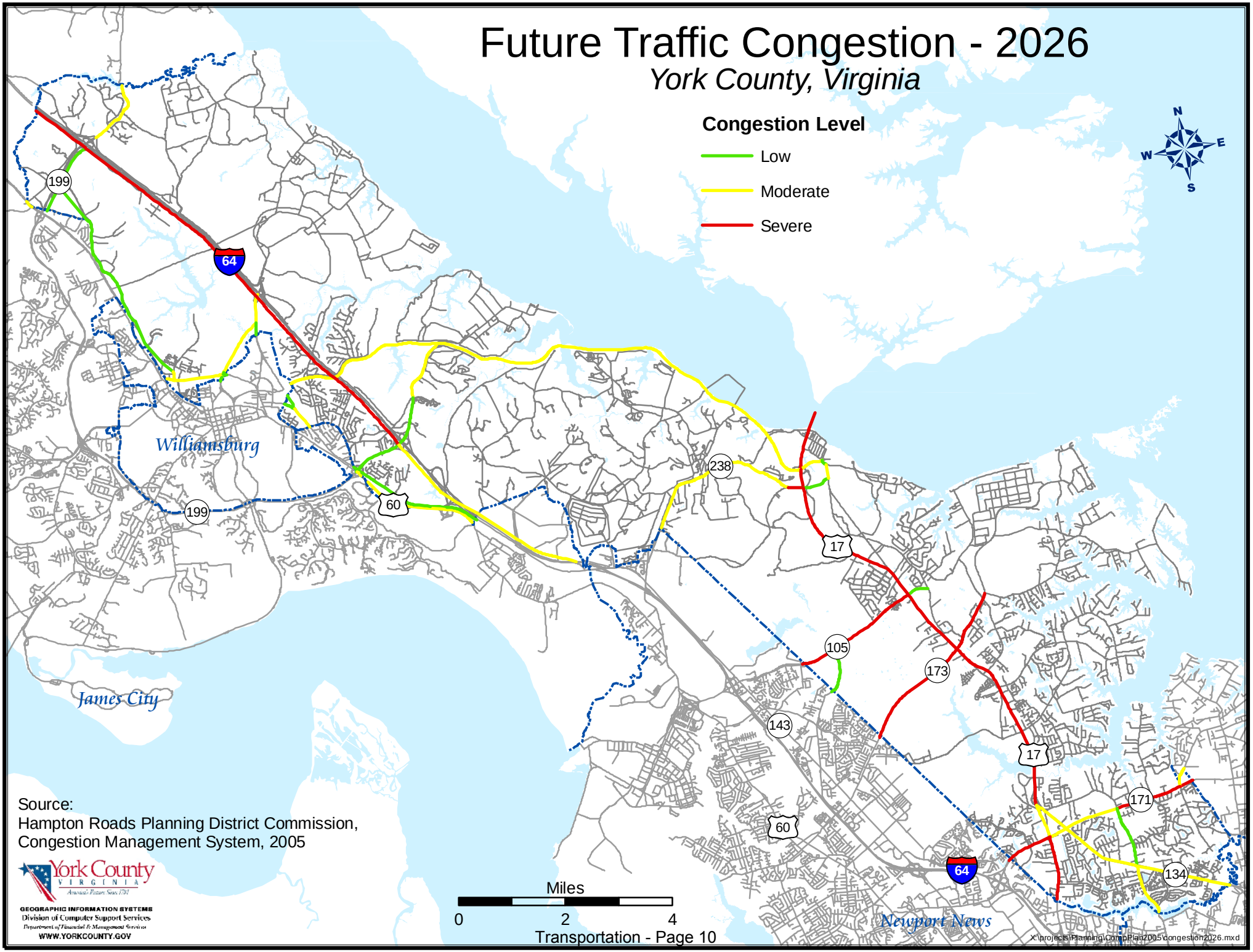
Future Traffic Congestion - 2026

York County, Virginia



Included in the *Hampton Roads 2026 Regional Transportation Plan* but not yet in the state six-year plan is a project to widen Interstate 64 from 4 to 8 lanes (6 general-purpose lanes and 2 HOV lanes) from Bland Boulevard in Newport News to Route 199 (the Water Country USA interchange) in York County. A Major Investment Study (MIS) of the entire I-64 transportation corridor from Hampton Roads to Richmond was completed in 1999. All of the localities and other stakeholders along this corridor participated in the MIS. The Locally Preferred Alternative, which was adopted by the study participants, including York County, includes the 8-lane widening from Bland Boulevard to Route 199 and a widening from 4 to 6 lanes from Route 199 north to Interstate 95 in Richmond.

For interstate and primary road system improvements, the County is largely beholden to VDOT and the Commonwealth Transportation Board, which annually adopts the State *Six-Year Improvement Program* establishing funding priorities for interstate, primary, and urban highway system improvements, as well as public transit, ports, and airports. It also includes secondary road projects for which Federal funding is being utilized. Each year the Board of Supervisors adopts a recommended program of interstate and primary road improvement projects and priorities and makes a request of the Commonwealth Transportation Board that these projects be given consideration for inclusion in the State six-year plan. In this process, the County is competing with every other locality in the State.

The County has much more influence over secondary road system improvements than it does over the interstate and primary systems. Each year, the state distributes secondary road funds among the counties under VDOT jurisdiction. VDOT serves as the fiscal agent, and these funds can be spent *only* on secondary road system improvements. The County works with the local VDOT representatives to prioritize secondary road projects over the next six-year period and to allocate the funds accordingly. The Board of Supervisors formally establishes those priorities through the adoption each year of the *Six-Year Secondary Road Improvement Plan*. Secondary roads that are currently programmed for some type of improvement are Cary's Chapel Road, Big Bethel Road, Grafton Drive, Lakeside Drive, Penniman Road, Burts Road, Yorktown Road, Yorkville Road, and Water Country Parkway. These projects are described in **Table 3** below.

Programmed Secondary Road Improvement Projects

Route #	Route Name	Project Description
782	Cary's Chapel Rd.	Construct intersection improvement at Victory Boulevard (Route 171)
600	Big Bethel Road	Intersection improvements at Route 134 and Route 171
1050	Fort Eustis Blvd. Extension	Construct a new road between the current terminus at Patriot Square Shopping Center and Old York-Hampton Highway (Route 634)
621	Grafton Drive	Reconstruct and re-align Grafton Drive/Dare Road/Route 17 intersection to accommodate connection of Grafton Drive and Burts Road
620	Lakeside Drive	Intersection and turn lane improvements between Route 17 and Dare Rd
641	Penniman Road	Reconstruct and repave from Alexander Lee Parkway to Fillmore Drive
709	Burts Road	Connect with Grafton Dr. on a new corridor alignment parallel to Rte 17
658	Yorkville Road	Improve 90-degree curve
238	Cook Road	Provide local match for CMAQ-funded project to construct bicycle lanes between the northern intersection of Surrender Road and Ballard Street
NA	Water Country Pkwy	Relocate/realign to eliminate s-curve and reconstruct to improve access to economic development priority area.

Table 3

Planned and programmed improvements to the roadway system discussed above are depicted on the 2025 Roadway Plan map. This map also depicts various "recommended" improvements that are or will be needed within the next twenty years but for which no funding source has yet been identified. Most of these projects are intended to resolve existing deficiencies in the road network that were identified by citizens during the *Comprehensive Plan* public input process. Although major road widenings – such as I-64, Route 17, and Big Bethel Road – will require public funding, many of the recommended improvements can be accomplished through the County's development review process at little or no public expense. To the maximum extent possible, the

County should work with the development community to ensure conformity between any future development in the areas discussed below and the recommended roadway network:

- Future traffic projections indicate that it will be necessary in the next twenty years to: widen Interstate 64 to six lanes from the south Route 199 interchange all the way to the James City County line and beyond; widen Route 17 to six lanes all the way from the Coleman Bridge to the Newport News city line; and to widen Big Bethel Road to four lanes from the Hampton city line at least to Hampton Highway (Route 134) and potentially to Victory Boulevard (Route 171).

- Construction of a road connecting Barlow Road to Fenton Mill Road would provide an alternate route for Skimino residents to Route 199 and I-64, thereby reducing traffic on Newman Road, which is narrow and has sight distance deficiencies, particularly at the Barlow Road intersection. Any development in the large area between these two roads should be required to have “spine” street systems without individual residential driveway access to achieve such a connection.

- Extension of Mooretown Road beyond its present terminus at Lightfoot Road would improve access to a large area of contiguous undeveloped commercial acreage and, if extended all the way to Croaker Road in James City County, provide an alternate route between the Lightfoot and Croaker areas, diverting traffic off of Richmond Road and Rochambeau Drive and providing a more direct route to the James City County Library. While extension of such a roadway into James City County is a matter for its governing body to decide, the imminent development opportunities and potentials on the York County side of the jurisdictional boundary line make it important to identify and ensure the availability of a corridor, should such extension be desired in the future.

- Waller Mill Road is the only means of access to a large area (approximately 400 acres) of contiguous vacant property bounded by watershed property to the north, Route 132 to the east, Bypass Road to the south, and existing development to the west. The road is not wide enough to accommodate future traffic if and when this property is developed. In order to provide a secondary means of access to this area as well as relieve existing congestion on Waller Mill Road in the vicinity of Mooretown and Bypass Roads, development of this property (which is all owned by the Colonial Williamsburg Foundation) should include a street network that provides for a connection between Waller Mill Road and Bypass Road and/or Route 132.

- Queens Creek Road is the single means of ingress and egress to a fairly large residential area that has further development potential and is too narrow for the amount of traffic it carries currently. Improvements to Queens Creek Road – including widening, construction of sidewalks, and/or establishment of interconnections to nearby streets – are needed to address these deficiencies.

- The unusually long entrance/exit ramp at the I-64 Grove interchange presents an opportunity to provide direct interstate access to over 200 acres of undeveloped commercial acreage on the northeast side of the interstate that, if developed, would overburden Route 199 and the Route 199/I-64 interchange, which is already experiencing moderate congestion. Construction of an access road tying into the interstate ramp and extending to Route 199 at Water Country Parkway would greatly improve access while taking pressure off of Route 199. Located in the southeast quadrant of the Route 199 interchange, this Economic Development Priority Area has potential for large-scale retail development between I-64 and Water Country USA. To build such a road would require approval from the Commonwealth Transportation Board and the Federal Highway Administration.

2025 Roadway Plan

N E S W

0 4,000 8,000 16,000 24,000
Feet

Recommended Improvement	Programmed Intersection Improvement
Programmed Improvement	Recommended Intersection Improvement
Planned Improvement	

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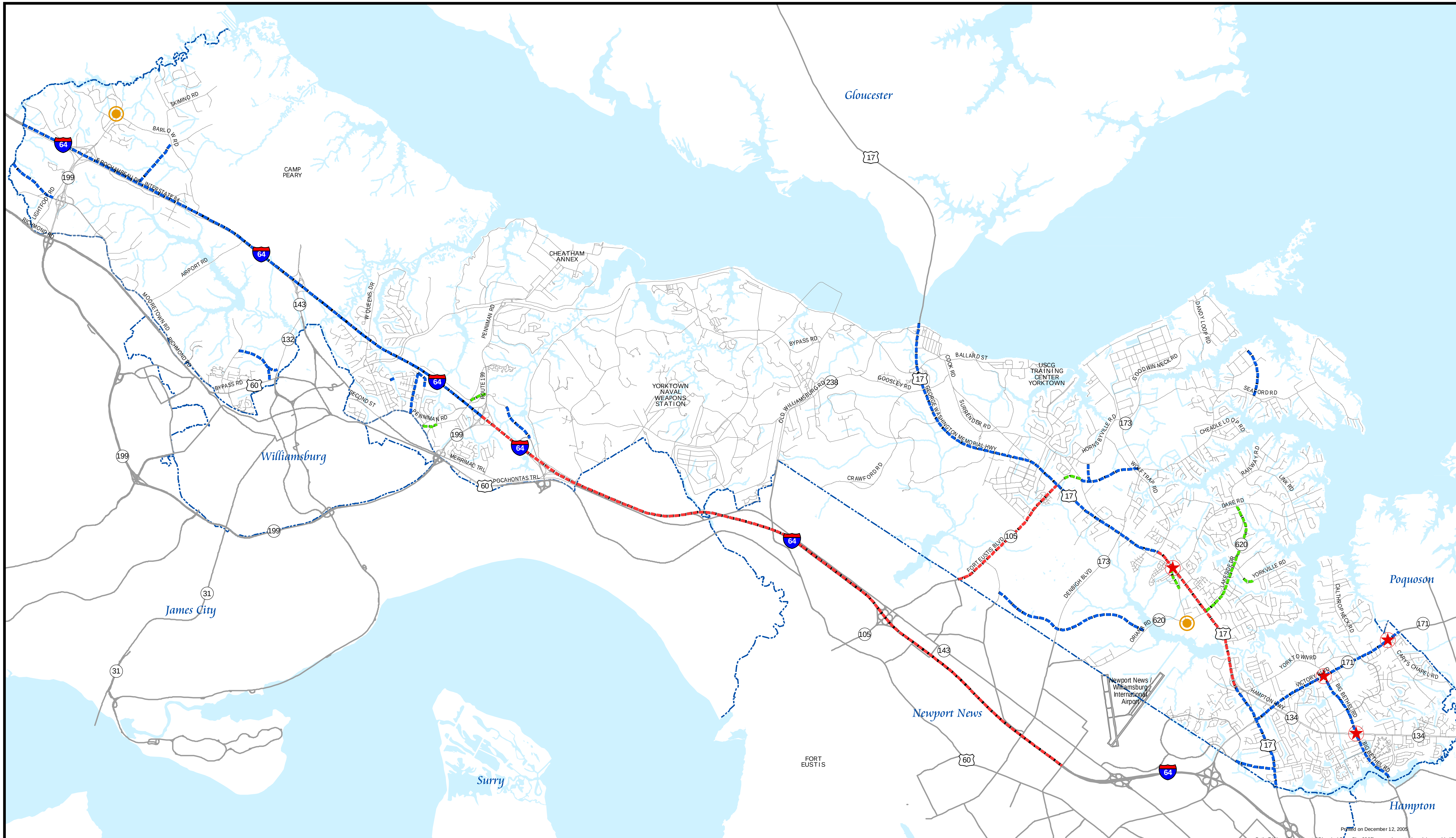

Gloucester
CAMP PEARY
CHEATHAM ANNEX
SKIMINO RD
BARLOW RD
E ROCHAMBEAU DR
INTERSTATE 64
LIGHTFOOT RD
RICHMOND RD
AIRPORT RD
MOORETOWN RD
W QUEENS DR
PENNIMAN RD
ROUTE 199
BYPASS RD
SECOND ST
MERRIMAC TRL
POCAHONTAS TRL
Williamsburg
James City
Surry
YORKTOWN NAVAL WEAPONS STATION
OLD WILLIAMSBURG RD
GOOSLEY RD
BALLARD ST
COOK RD
SURRENDER RD
GEORGE WASHINGTON MEMORIAL HWY
CRAWFORD RD
USCG TRAINING CENTER YORKTOWN
GOODWIN NECK RD
DANDY LOOP RD
SEAFORD RD
HORNSBYVILLE RD
CHEADLE LOOP RD
WOLF TRAP RD
RAILWAY RD
LINK RD
DARE RD
LAKESIDE DR
YORKVILLE RD
FORT EUSTIS BLVD
DENBIGH BLVD
ORIANA RD
CALTHROP NECK RD
YORKTOWN RD
VICTORY BLVD
BIG BETHEL RD
CARYS CHAPEL RD
HAMPTON HWY
Poquoson
Hampton
Newport News
Newport News / Williamsburg International Airport
FORT EUSTIS
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- A connecting road between Hornsbyville Road and the proposed Fort Eustis Boulevard extension from Old York-Hampton Highway to Seaford Road would enable residents of Hornsbyville Road and the Waterview area to easily and directly access Fort Eustis Boulevard and Interstate 64 and prevent them from "cutting through" residential areas on subdivision streets not designed or intended for such traffic.

- Extension of Independence Boulevard (the entrance road into the Lakewood Village development now under construction on Denbigh Boulevard) to Richneck Road would provide a road connecting between Denbigh Boulevard and Ft. Eustis Boulevard. The proposed road extension is consistent with the Newport News comprehensive plan, which recommends a "Denbigh/Ft. Eustis Connector" between Denbigh Boulevard and Ft. Eustis Boulevard in York County.

- The planned expansion of Newport News/Williamsburg International Airport will require the realignment of a segment of Oriana Road or, alternatively, a runway bridge over the road. Any realignment should be limited to the segment between Harwoods Mill Reservoir and Denbigh Boulevard, where it should tie into the planned signalized intersection of Denbigh Boulevard and Independence Boulevard. With the possible extension of Independence Boulevard to Richneck Road (discussed above), this would provide for a continuous corridor from Route 17 to Ft. Eustis Boulevard, which could divert significant amounts of traffic off both of these congested highways.

- If environmentally feasible, a road connection in the undeveloped area between Shirley Road and Seaford Road in Seaford would provide a secondary means of access to the Back Creek area, which contains numerous residences as well as water-oriented commercial/industrial uses (e.g. Seaford Scallop) that generate significant truck traffic that existing roads were not adequately designed to accommodate. Development in this area may be precluded by wetlands or other environmental factors; however, any construction that is permitted should be required to reserve the right-of-way for such a connecting road and have its lots arranged and internal streets designed to accommodate it.

- Sight distance improvements are needed at the intersection of Burts Road and Oriana Road.

- Extension of Commonwealth Drive to provide a link between Commonwealth Drive and Route 17 at its signalized intersection with Coventry Boulevard would greatly improve access to one of the County's Economic Development Priority Areas. A future road corridor should be reserved through this area, and any development therein should be required to have its internal street system designed accordingly and to construct appropriate segments of the connector. Any such road should be somewhat circuitous and perhaps incorporate appropriate traffic-calming design features so as not to encourage cut-through traffic through the Coventry/Tabb Lakes/York Meadows/Patriot Village area.

There are a number of older secondary roads in the County that are not wide enough to safely accommodate the amount of traffic they carry. Many of them lack paved shoulders. When development is proposed along such substandard roads, the County requires the developer to dedicate half of the right-of-way deficiency for future road widening, but it is extremely unlikely that there will be enough secondary road funds to widen all or even a significant number of these roads in the next 20 years. These are roads that would benefit greatly from a minor shoulder widening and spot improvements that could be done as part of a rehabilitation and repaving project (ditches, paved shoulders [for bikes], right-turn wedges/tapers). This approach, which was successfully utilized to improve a segment of Seaford Road in 2004, is a simpler and less costly alternative that can be implemented much more expeditiously than a full-scale widening project. The roadway segments listed in **Table 4** below are good candidates for this type of maintenance project and a system for evaluating and ranking them as to priority should be

developed and kept up-to-date as a part of the annual review of the Secondary System Six-Year Plan**.**

Proposed Secondary Road Rehabilitation/Repaving Projects			
Route No.	**Route Name**	**From**	**To**
655	Allens Mill Road*	Dare Road	Wolftrap Road
718/626	Back Creek Road/Shirley Road	Seaford Road	Dead end
718	Back Creek Road*	Seaford Road	Goodwin Neck Road
660	Baptist Road	Route 238	Spring Road
604	Barlow Road*	Newman Road	Skimino Road
604	Barlow Road*	Skimino Road	East Rochambeau Dr.
718	Battle Road	Route 17	Old York-Hampton Hwy
600	Big Bethel Road	Route 134	Route 171
709	Burts Road*	Oriana Road	Grafton Dr connector
606	Calthrop Neck Road	Route 171	Dead end
782	Cary's Chapel Road	Route 171	Poquoson city line
615	Charles Road	Yorkville Road	Dead end
629	Dandy Loop Road	Goodwin Neck Road	Goodwin Neck Road
613	Darby Road*	Route 17	Dead end
620	Dare Road	Dare Elementary	Lakeside Drive
620	Dare Road	Lakeside Drive	Link Road
659	Dogwood Road	Route 238	Dead end
602	Fenton Mill Road*	Newman Road	JCCo line
238	Goosley Road	Crawford Road	Route 17
718	Hornsbyville Road*	Old York-Hampton Hwy	Goodwin Neck Rd
716	Hubbard Ln/West Queens Dr	Sheppard Drive	Queens Lake Mid. School
1314	Lakeshead Drive*	Hubbard Lane	New Quarter Park
646	Lightfoot Road	Route 60	Rochambeau Drive
679	Lindsay Landing Lane	Showalter	Dead end
620	Link Road	Dare Road	Railway Road
603	Mooretown Road*	Airport Road	Old Mooretown Road
646	Newman Road*	Fenton Mill Road	James City County line
792/1514	Old Lakeside Dr/Whispering Pine Dr	Lakeside Drive	Fielding Lewis Drive
603	Old Mooretown Road	Mooretown Road	Route 60 overpass
632	Old Wormley Creek Road*	Hornsbyville	Dead End
641	Penniman Road	Interstate 64	Route 199
641	Penniman Road	Alexander Lee Pkwy	Alexander Lee Pkwy
642	Queens Creek Road	Penniman Road	Springfield Drive
617	Railway Road	Link Road	Dare Marina
620	Railway Road	Dare Road	Link Road
622	Seaford Road	Ellerson Court	Goodwin Neck Road
622	Seaford Road	Sommerville Way	Back Creek Road
622	Seaford Road*	Back Creek Road	York Point Road
619	Ship Point Road	Link Road	Anchor Drive
614	Showalter Road	Route 17	Lakeside Drive
797	Skimino Road*	Barlow Road	Dead End
630	Wolftrap Road*	Willow Lakes	Goodwin Neck Road
706	Yorktown Road	Route 134	Tabb High
706	Yorktown Road*	Tabb High School	Calthrop Neck Road
658	Yorkville Road	Lakeside Drive	Fairfield
* Roadway scheduled for a utility project that could potentially be coordinated with road improvement			

Table 4

In addition to adding new roadway capacity, traffic flow and safety can be improved through the use of good land use planning practices that can help to preserve *existing* capacity – at no direct cost to the taxpayer. One such strategy is *access management*, which limits the number of

commercial and industrial entrances on higher order streets, particularly arterials and major collectors. Besides creating additional conflict points and thereby increasing the potential for crashes, unsignalized driveways along arterial roads impede traffic flow and, in so doing, reduce road capacity. It is estimated that the capacity of a four-lane arterial street with a 45 mph speed limit will be reduced by over 1% for every 2% of the traffic that turns between the right lane and driveways at unsignalized driveway locations. For these reasons, multiple entrances to a single development should only be permitted for large-scale developments with a significant amount of road frontage, and shared entrances should be required where feasible along higher order streets.

Another land use strategy that promotes the safe and efficient movement of vehicles is the interconnection of subdivision streets. The benefits of interconnected streets are well documented. In *Conservation Design for Subdivisions*, Randall Arendt writes, "every effort should be made to connect each street with another so that dead ends will be minimized. Interconnected streets provide easier and safer access for fire engines, ambulances, school buses, and garbage trucks, while distributing traffic more evenly and helping to avoid conditions where certain residential streets become 'collectors' with everyone in the entire development funneling through them. In circumstances where cul-de-sacs are unavoidable (typically for topographic reasons), they should always be provided with pedestrian and bike linkages to other nearby streets or to a neighborhood trail system."[9] York County requires subdivision street systems to be integrated with one another, consistent with the Code of Virginia (§15.2-2241.A.2.), which requires subdivision ordinances to provide "for the coordination of streets within and contiguous to" [any proposed] subdivision with other existing or planned streets within the general area," including planned streets in nearby future subdivisions. Well-designed interconnected streets can provide alternate routes to divert traffic off of existing sub-standard streets without generating "cut-through" traffic that does not have an origin or a destination within the general area. Unfortunately, when the progression of development results in the actual construction of a long-planned interconnection (as shown on a subdivision plat), the residents along the existing street(s) often express concern about safety, security, property values and, in some cases, have no knowledge that the future interconnection was shown on their subdivision plat.

The City of Suffolk has a quantitative means of ensuring the adequate interconnection of subdivision street networks. Suffolk's Unified Development Ordinance requires the street network for any site plan or subdivision to achieve a "connectivity ratio" of at least 1.40. The connectivity ratio is the number of street links (that portion of a street defined by a node at each end or at one end) divided by the number of nodes or link ends (the terminus or the intersection of 2 or more streets).[10] This is the same standard developed by Reid Ewing, who in Best Development Practices recommends a connectivity ratio of 1.40 as "a nice target for network planning purposes." This is "about halfway between the extremes" of "traditional urban grid" street networks and "contemporary suburban networks."[11] The Town of Cary, North Carolina requires signs to be posted at all stub streets to notify residents that there is a potential for a future road connection. This ensures that present and prospective homeowners are aware that a road connection is likely to occur sometime in the future as adjacent property is developed. Additionally, where interconnections are provided, the inclusion of traffic-calming measures in the initial development design and street construction can be helpful in avoiding or minimizing future concerns (and retro-fitting costs).

Mixed use developments that combine residential and commercial uses within a single, compact high-density development allow people to live, work, and shop without ever leaving their neighborhood, thereby keeping traffic off of already congested major roads. Such communities are typically designed to be pedestrian-oriented so that residents can walk between their homes

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[9] Randall Arendt, *Conservation Design for Subdivisions* (Island Press: Washington D.C.), 1996, p. 45

[10] City of Suffolk, Virginia, Unified Development Ordinance, Article 6, Design and Improvement Standards §31-612 (Street Improvement Standards) p. 6-110

[11] Reid Ewing, *Best Development Practices*, American Planning Association, Chicago 1996 pp. 55-57

and jobs, shopping, restaurants, etc. Local examples of such "live/work" communities include Port Warwick in Newport News and New Town in James City County. York County's Zoning Ordinance provides opportunities for mixed-use development through the Planned Development district; however, the underlying land use designations, which provide for relatively low development densities, may present a barrier.

The most fundamental land use strategy for reducing or preventing congestion is not to allow development that will generate more traffic than the road network can accommodate. Now more than ever, the shortage of funding for new roadway projects at the national and state level dictates that land use planning and transportation be in concert with one another. This calls for a shift in focus: rather than merely trying to design a road network to accommodate growth, it is important to establish land use densities that channel growth away from congested areas and roads that are not wide enough to accommodate the traffic that could potentially be generated by development on surrounding land.

In addition to land use strategies, another alternative to road construction that can improve traffic flow and safety is to make use of rapidly developing technologies to manage transportation more efficiently on the existing network. This is the focus of Intelligent Transportation Systems (ITS), which recognizes that traffic congestion cannot be eliminated but can be better managed through technology. The overriding vision for ITS in Virginia, articulated in VDOT's 2001 *Smart Travel Strategic Plan*, is to "make travel 'smart' through computers, microprocessors, high speed wire and wireless communications, and a host of supporting sensory and electronic technology, as well as through automated, streamlined agency processes and procedures."[12] Local examples of ITS include the "Smart Tag" automated toll facility at the Coleman Bridge, video cameras along I-64 and I-664 for monitoring traffic flow through the VDOT Smart Traffic Center in Virginia Beach, variable message signs for reactive routing, and the OPTICOM system (in place at numerous intersections in York County) that enables fire and rescue vehicles to override traffic signals. Development and deployment of additional ITS strategies is addressed in both the state ITS plan and the *Hampton Roads ITS Strategic Plan* completed in 2004.

Transit

Although mass transit includes bus and rail transit, railways are addressed in a separate section of this plan. Advantages of bus transit over rail include the significantly lower infrastructure cost and flexible routing, which allows service to be modified to accommodate changes in land use and travel patterns. Relatively few County residents currently use mass transit, primarily because there is little mass transit available in the County. Portions of the upper County – including the Penniman Road/James-York Plaza area and the Bypass Road corridor – are served by the Williamsburg Area Transport (WAT) system, which is operated by James City County Transit and provides bus service throughout much of the greater Williamsburg area. Currently there are 9 stops in York County, and a new route serving the Mooretown Road corridor was added in July 2005. In FY04 the WAT system carried over half a million passengers, and ridership has increased fairly steadily over the years. In fact, between 1992 and 2002 the percentage increase in riders exceeded the population increase in the Williamsburg area. (Because of changes in service that took place in 2003-2005, such as the incorporation of the College of William and Mary bus service into the WAT system, the ridership data for these years are not comparable with data for previous years.)

There is currently no bus service in the lower County. A three-year pilot project was conducted in the mid-1990s by the County in partnership with Pentran (the Peninsula's former transit agency, which has since merged into Hampton Roads Transit) and the Virginia Department of Rail and Public Transportation to provide bus service in the lower County in an effort to provide public transportation for County residents who need it. The service, which was paid for mostly with Federal ISTEA funds, never attracted significant ridership and was discontinued in 1997.

[12] Virginia Department of Transportation, *Smart Travel Strategic Plan – 2002*, p. 18.

Another form of transit is carpooling and ride sharing. To encourage this activity, VDOT has constructed a commuter parking lot on East Rochambeau Drive. In addition, the region funds a computerized ride-matching program called Traffix that works with employers in the region to develop ride-sharing programs. Finally, high occupancy vehicle (HOV) lanes that are limited in the morning and afternoon peak hours to vehicles occupied by two or more people offer another means to encourage ride sharing. As congestion worsens in the general-purpose lanes, there is more of an incentive for people to carpool. HOV lanes are planned for construction along I-64 between the Route 199 (south) interchange and I-664 in Hampton.

In addition to the resident-oriented services discussed above, the visitor market presents opportunities for creative transportation solutions. Riverwalk Landing in Yorktown includes two docks – one that will support vessels such as cruise and tall ships, and the other for smaller recreational watercraft. Visitors who arrive at Yorktown by water will need ground transportation services to visit the rest of the Historic Triangle. During the spring and summer months, the County operates a free Yorktown trolley bus service to shuttle visitors throughout the village. In addition, the National Park Service has begun offering seasonal bus service between Yorktown and Williamsburg, and the Virginia Department of Rail and Public Transit plans to initiate seasonal express bus service between Virginia Beach and Williamsburg in the summer of 2005.

Walkways

Walking is the most basic and yet probably the most overlooked of all modes of transportation. Well-designed walkways increase pedestrian safety and, in so doing, invite pedestrian use. In tourist and commercial areas, good sidewalks can provide economic advantages by encouraging consumers to patronize nearby establishments rather than driving farther and perhaps to a business not located in the County.

In several cases – including Richmond Road, Second Street, and Merrimac Trail – York County can be defined as the place where the sidewalk ends. To address this deficiency, the Board of Supervisors adopted a *York County Sidewalk Plan* in November 1995. This plan, which envisions a sidewalk network that encompasses 33 miles of roadway, was based on two premises: that people should be able to walk safely to nearby schools, shops, parks, churches, libraries, and they should be encouraged to do so. Accordingly, the sidewalk plan focuses on areas where people live within a reasonable walking distance of such facilities.

One way to create a more pedestrian-friendly environment is to incorporate sidewalks into road construction and improvement projects. In accordance with its *Policy for Integrating Bicycle and Pedestrian Accommodations*, VDOT will initiate all highway construction projects with the presumption that the projects will accommodate walking and bicycling. Another mechanism, which the County provides for in the Zoning and Subdivision Ordinances, but only under certain, limited circumstances, is to require sidewalks in commercial areas and within residential subdivisions as a condition of development. One disadvantage of this approach (i.e., requiring sidewalks to be installed as a condition of development) is that, at least initially, it may result in a "sidewalk to nowhere" and may look very much out of place. However, in developing areas these incremental investments by developers will eventually result in an interconnected system, or at least a system where any missing links can be constructed with a relatively minimal investment of public funds. Finally, along existing roadways where there is a demonstrated need for sidewalks but neither roadway improvement nor significant new development is likely, the County can initiate and contribute funding for sidewalk construction. This is currently being done along Victory Boulevard (Route 171) in Tabb and along Richmond Road (Route 60), Second Street (Route 162), and Merrimac Trail (Route 143) in the upper County. Federal and state funds are available for walkways through the CMAQ (Congestion Mitigation and Air Quality) program, the Transportation Enhancements program, and the state Revenue Sharing program, all of which require local matching funds (ranging from 20% to 50% of the total project cost). Through the Capital Improvement Program the Board of Supervisors has for many years been allocating funds to a sidewalk development fund for this purpose.

Waterways

The many waterways in and around York County are used by residents and businesses for a variety of purposes including seafood harvesting, recreation, and passive enjoyment, but only the York River serves as a transportation artery. The York River, with a 32-foot wide channel, is one of the deepest rivers in the world. It is 33 miles long and is fed by a mixture of freshwater from rainfall and drainage from the west and tidal action and saltwater from the Atlantic Ocean and the Chesapeake Bay from the east.

Three primary types of cargo are transported by water along the York River – crude oil and refined petroleum products to and from the Giant refinery; military supplies to and from the U.S. Navy installations along the river (primarily the Yorktown Weapons Station); and both raw materials and finished paper products to and from the Chesapeake Corporation at West Point.

In addition to cargo transport along the river, Yorktown has served as a port-of-call for passenger cruise ship lines of various sizes. The major impediment to this type of activity has been the lack of adequate docking facilities. The *Yorktown Master Plan* called for "reconstruction of a new wharf/pier complex which extends far enough into the river to allow deeper draft vessels to dock and which is long enough (approximately 200 feet) to allow two large vessels – such as tall ships, dinner cruise boats, or commercial cruise lines – to dock simultaneously."[13] Such a facility would accommodate deeper draft vessels and large vessels – such as tall ships, dinner cruise boats, or commercial cruise lines – to dock simultaneously. The plan also recommended that facilities be provided for temporary docking of small pleasure boats for boaters wishing to make day trips to Yorktown to visit restaurants, shops, and historical attractions. Both recommendations have been incorporated into the Riverwalk Landing waterfront redevelopment project that opened in May 2005. As a result, Yorktown is now capable of hosting recreational vessels for short-term dockage, tall ships, regional passenger cruise lines, and dinner and sightseeing cruise vessels, thus effectively making it the port-of-call for the Historic Triangle.

CITIZEN INPUT

Throughout the Comprehensive Plan review process, citizens expressed strong concern about the growth of traffic on the County's roadways. Over two-thirds of those interviewed in the telephone survey stated that it was extremely important (38.2%) or important (30.0%) for the County to build new roads and widen existing ones in the next 20 years to reduce traffic congestion. With a mean score of 3.91, this item was ranked tenth in the overall list of County priorities. The questionnaire responses yielded similar results: when asked what they like least about living in York County, the citizens named "traffic" more than anything else. The second highest response – growth and development – is closely related to traffic.

On the questionnaires and in conversations at the Neighborhood Open Houses, citizens expressed considerable support for the construction of more sidewalks and bikeways for both transportation and recreation. In the telephone survey, however, only about a third considered it extremely important (13.8%) or important (19.7%) for the County to build more bike paths. With a mean score of 2.88, this item has a relatively low funding priority.

Regarding air transportation, the telephone survey results indicate that a little over half of County residents (53.2%) oppose the extension of runways at Newport News/Williamsburg International Airport further into York County so that airlines can offer more direct connections to more cities. Not surprisingly, most of the opposition is in the lower County, where the airport – and its associated noise impacts – is located. Sentiment is especially negative in the 23692 zip code area, which corresponds largely with that part of the County located within the runways' flight

[13] *Yorktown Master Plan*, adopted by the York County Board of Supervisors March 4, 1993 (prepared for the York County Board of Supervisors and the Yorktown Revitalization Steering Committee by Sasaki Associates, Inc. Carlton Abbott and Partners, Inc., and Anderson Associates, Inc.), p. 89.

paths and subject to airport noise. A little over half of the upper County residents (53.1%), in contrast, favor airport expansion.

PLANNING ISSUES FOR THE FUTURE

The future will bring more growth to the County and hence more traffic. It is important to recognize that traffic would continue to grow even if the County were fully developed since it is surrounded by localities that have much more land area to support further development. The Peninsula alone is expected to add over 100,000 new residents between 2000 and 2030. Route 17 is the major artery running through the lower County, linking the Peninsula with both south Hampton Roads and the Middle Peninsula to the north. Similarly, Interstate 64 runs through the upper County and stretches north to the Richmond metropolitan area, where it connects with I-295 and I-95. Much of the peak-hour traffic on these two regional arteries is commuter traffic that has an origin and/or destination outside of York County. Since these and many travel patterns cross the jurisdictional boundaries of the communities within Hampton Roads, the need for a regional approach to transportation planning is paramount. The Hampton Roads Crossing Study, CSX Corridor and I-64 Major Investment Studies, and the work of the Hampton Roads Metropolitan Planning Organization are good examples of the type of regional, long-range planning and decision-making that will be needed more and more in the years ahead.

Traffic forecasts indicate that expanding roadway capacity is a necessary component of the County's and the region's long-range transportation strategy. Route 17, Fort Eustis Boulevard, Interstate 64, and Victory Boulevard are critical regional facilities that will need to be widened to relieve existing congestion as well as accommodate projected traffic growth. Most of the funding for these and other road improvements comes ultimately from the Federal and state governments, and the County must continue to pursue discretionary funding for transportation improvements. One avenue through which the County does provide local funding for road projects is the VDOT Revenue Sharing program, which allows localities to leverage transportation dollars by contributing up to $500,000 annually – matched by the state on a 50/50 basis – for highway projects. The County regularly participates in this program to the maximum extent allowed, and for several years the Board of Supervisors has lobbied the General Assembly to raise the $500,000 limit (on a permanent basis, and not just for limited times as was done in 2005) to allow those localities that are willing and able to contribute more toward alleviating their transportation problems to do so.

Although roadways will continue to be the major component of the region's transportation system for the foreseeable future, York County and surrounding jurisdictions will need increasingly to pursue strategies to reduce the prevalence of the single-occupancy vehicle. As congestion on our major roadways increases, it will become increasingly important to expand the range of transportation options, including rail and bus transit, that have the capacity to move more people more efficiently. These options will become more viable as the region's population grows and as roadway congestion reaches intolerable levels. Demand for transit will also be triggered by one of the other important trends of the next twenty years: the growth of the senior population in the County and across the nation. In the years ahead the transportation system will need to be adapted to better meet the mobility needs of this fast-growing segment of the population. Senior-oriented transit services will be needed since older residents, particularly those who are at least 70 years old, are less likely to be drivers.

As traffic on the County's roadways grows it is almost inevitable that the number of crashes will rise. Reducing the *rate* of crashes (i.e., the number of crashes per vehicle mile of travel), however, is not an unrealistic goal. One very promising safety initiative is the "Photo Red" program (i.e., the use of photo-monitoring equipment for red light enforcement at critical intersections). "Photo Red" was authorized by the General Assembly for several years but only as a demonstration project and only in a few select jurisdictions. Although it has been proven to be an effective deterrent to red light running in numerous studies, the General Assembly discontinued the program in 2005.

Photo Red is one example of a technological solution to our traffic problems. The next twenty years will likely bring other technological advances that cannot even be imagined today. Development and deployment of Intelligent Transportation Systems (ITS) technologies should continue to be a regional priority. In particular, expansion along the Interstate system on the Peninsula and on major primary roads such as Route 17 should be supported by the County. ITS projects are eligible for CMAQ funding through the region; in fact, the signal system upgrade for Route 17 that is currently under design is being funded partly with CMAQ funds. There may be other major roads in the County that would also benefit from improved traffic signal synchronization. Another example of a technological solution – albeit only a partial one – to roadway congestion that involves very little public expense is telecommuting. As one of the major employers in the County, York County can help lead the way by providing opportunities for employees whose job tasks do not require them to be physically located in a County office.

Bikeways and walkways can also play a role, however marginal, in enhancing mobility and reducing congestion by encouraging people to make shorter trips on foot or on a bicycle. As such, they are not just recreational facilities but transportation facilities as well. Construction of bikeways was not identified as a high funding priority in the telephone survey, but there are several avenues by which both bikeways and walkways can be provided without significant public investment. For example, such facilities are less costly to construct when built as part of a road construction or widening project. In March 2004, the Commonwealth Transportation Board adopted a new *Policy for Integrating Bicycle and Pedestrian Accommodations* that states that VDOT will initiate all highway construction projects with the presumption that the projects will accommodate bicycling and walking. The County should support the incorporation of bikeway and sidewalks in such projects except in those instances identified in the VDOT policy where bikeways and sidewalks are not recommended. Furthermore, there are several funding sources specifically intended for such facilities – such as Transportation Enhancements and CMAQ – that would require the County to pay as little as 20% of the total project cost. Finally, ensuring that developers install bike and pedestrian facilities along designated routes as a condition of development approval requires no initial County expenditures and lessens the ultimate cost of providing complete, interconnected linkages.

A common distinction in bikeway planning is between transportation and recreational routes. The *Regional Bikeway Plan* attempts to address both but is still principally a transportation-oriented plan. The County should consider recreational routes in planning park facilities as well as in the review of large residential developments. It is especially important that bikeways connect residential, commercial, and recreational areas, and community facilities such as schools, libraries, and athletic fields. In any case, bicycle facilities should be connected and integrated to form a comprehensive bikeway system.

Traffic growth will not be limited to the surface transportation system. Steady growth in passenger activity at Newport News/Williamsburg International Airport, which has averaged more than 10% a year for the past ten years and over 15% annually for the past five years, is stretching the airport beyond its capacity. While it is impossible to predict whether or not demand will ever be sufficient to warrant the ultimate three-runway configuration favored by the Peninsula Airport Commission, it seems clear that some type of expansion will be necessary. The Norfolk and Richmond airports will become increasingly impractical and inconvenient for York County residents as traffic in the region grows and Interstate 64 congestion increases. A regional "super-port" on a rural site in or near Isle of Wight County also would not be convenient for York County residents and could dilute the economic benefits of the Newport News airport, which, according to a recent study, generates an estimated 2,459 jobs, $55.5 million in wages, and $148.1 million in annual economic activity.[14] Although the direct on-airport benefits accrue to the city of Newport News, it is likely that many of the off-airport impacts – including hotels, retail and restaurants, tourist destinations, and travel agents – are felt in York County. The growing hotel demand along the Route 171 corridor in both

[14] Virginia Department of Aviation, *Final Technical Report, 2004 Virginia Airport System Economic Impact Study* (April 2004)

York County and Newport News is probably at least partly attributable to the proximity of the airport and the Oyster Point office development.

The *Airport Master Plan* for Newport News/Williamsburg International Airport calls for the extension of both existing runways and construction of a new parallel runway, to be built in phases in accordance with demand. The first of these three projects is the proposed extension of Runway 2-20 from 6,525' to 8,000', which would enable the airport to use both existing runways for its critical aircraft in peak travel times. Extension of this runway would require the relocation of Oriana Road; alternatively, the runway could bridge over the road. Approximately 25 developed properties in the Kentucky Heights area along Oriana Road would have to be purchased by the Peninsula Airport Commission. Otherwise, the area affected by such an extension would be limited to undeveloped Newport News Waterworks property. Noise impacts on County residents, therefore, would be negligible. A phased expansion, focusing first on adding runway capacity where it will have the least impact on County residents, is a sensible approach that will allow the noise impacts to be reevaluated to determine whether or not the master plan's projections prove to be accurate. If not, further expansion should not be supported.

GOAL, OBJECTIVES, AND IMPLEMENTATION STRATEGIES

Goal

Provide for the safe and efficient movement of people and goods within York County and throughout the Hampton Roads region.

Objectives

1. Promote the development of a regional multi-modal transportation system.

2. Maintain adequate levels of service on County roadways (i.e., LOS C or better).

3. Increase funding for transportation improvements critical to the mobility of York County's citizens.

4. Promote development and land use strategies that enhance roadway safety and preserve the carrying capacity of the roadway network.

5. Reduce crash rates on York County roadways.

6. Utilize technology to enhance mobility and safety.

7. Promote the development of improved air transportation service convenient to York County residents.

8. Increase the number of bicycle lane miles in the County in accordance with the *Regional Bikeway Plan* for Williamsburg, James City County, and York County.

9. Provide a safe and convenient walking environment for pedestrians.

10. Provide for the particular mobility needs of the senior population when planning transportation programs and facilities.

Implementation Strategies

1. Continue to support and participate in the regional network and modeling effort of the Hampton Roads Planning District Commission.

2. Continue to aggressively pursue all available road-funding sources through the Commonwealth Transportation Board and the Metropolitan Planning Organization.

3. Annually establish priorities for the improvement and expansion of the County's roadway network through the VDOT Six-Year Plan process and the Capital Improvements Program. Primary focus should be on the present and future congested facilities identified in this plan and projects shown on the 2025 Roadway Plan map. High-priority road widening projects in the Interstate and Primary system include Route 17 (George Washington Memorial Highway, Route 105 (Fort Eustis Boulevard), Interstate 64, and Route 171 (Victory Boulevard).

4. Work with VDOT to coordinate the scheduling of road improvement and utility projects to reduce neighborhood disruption as much as possible.

5. In partnership with neighboring jurisdictions, encourage the General Assembly and the Congress to increase funding for transportation.

6. Participate in the VDOT Revenue Sharing program to the maximum extent permitted and continue to lobby the General Assembly to raise the $500,000 limit on a permanent basis.

7. Continue to limit the number of access points on arterial and major collector roads and review development ordinances (regulatory measures) and incentive-based programs (grants, etc.) to identify possible ways to facilitate consolidation and elimination of access points to reduce conflicts.

8. Continue to support the Williamsburg Area Transport system and its expansion in the upper County and historic Yorktown.

9. Work with local and regional transit agencies to develop transit services for the elderly.

10. Support the development of enhanced rail service on the Peninsula including a regional light rail system running from Williamsburg to the lower Peninsula and higher speed rail service along the CSX corridor.

11. Encourage residential development patterns that provide direct driveway access from individual units to local streets and not to collector and arterial roadways.

12. Continue to require the interconnection of subdivision street systems for use by bicyclists, pedestrians, emergency vehicles, and – where such interconnection will not encourage "cut-through" traffic by people living outside the subdivisions – automobiles. In some cases where vehicular interconnections are provided, appropriate traffic-calming measures should be incorporated into the initial development design and street construction to reduce the potential for "cut-through" traffic.

13. Continue to lobby the General Assembly for stronger laws promoting traffic safety, with special emphasis on the "Photo Red" program, which should be reinstated and authorized in York County.

14. Promote and support the work of the Transportation Safety Commission.

15. Continue to provide County-funded law enforcement positions used in traffic law enforcement operations.

16. Work with the Transportation Safety Commission, the Sheriff's Office, VDOT, and the Hampton Roads Planning District Commission to improve traffic crash data collection and analysis for the purpose of identifying dangerous locations on the County's road network and developing strategies – through engineering, education, and enforcement – for improving traffic safety in these locations.

17. Integrate bikeway and sidewalk development into County road construction, reconstruction, and widening projects In accordance with the VDOT *Policy for Integrating Bicycle and Pedestrian Accommodations*.

18. Review and if necessary enhance the street lighting installation and service program to consider not only traffic but safety and security.

19. Continue to set aside funds annually through the CIP for the construction of bikeway and sidewalk projects in critical locations.

20. Review County development ordinances to identify opportunities to require sidewalks in more instances within residential neighborhoods and between residential neighborhoods and each other and nearby recreational areas, community facilities, and commercial establishments.

21. Support the expansion of runway capacity at Newport News/Williamsburg International Airport in a manner that reduces noise impacts on existing County residential areas.

22. Promote Yorktown as both an origination point and port-of-call for small passenger cruise ship operations.

23. Investigate dredging needs, including the identification of possible spoils sites, for both recreational and commercial watercraft along navigable creeks in the County.